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IN THE

Supreme Court of the United States

OCTOBER TERM, 1945

No. 46

GENERAL ELECTRIC COMPANY,
Petitioner,

vs.

JEWEL INCANDESCENT LAMP COMPANY, *et al.*,
Respondents.

REPLY BRIEF FOR PETITIONER

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Since respondents are not able to point to the slightest evidence that an inside frosted lamp bulb corresponding to the claims of the Pipkin patent ever existed, or had ever been suggested, prior to Pipkin's invention, it is not surprising that they have had to resort to irrelevant allegations of "monopoly" (Brief, p. 2), which are entirely without support in the record,* and to highly technical arguments concerning the details of the prosecution of Pipkin's

* On p. 3 of respondents' brief, the surprising assertion is made that

> "the General Electric Company constituted the sole and entire 'art' in the manufacture and sale of incandescent lamps until the expiration of its dominating patents."

This assertion is without any foundation in the record or in fact. For many years and since long before the expiration of the patents referred to, many companies other than the General Electric Company have manufactured and sold incandescent electric lamps.

patent application in the Patent Office and the form of the claims (Brief, pp. 11-28), and other arguments which are as tenuous as they are erroneous.

The Problem of Glare Prevention Was an Old Problem

The first argument with which respondents attempt to belittle the invention which they have appropriated is the assertion (Brief, p. 3) that there was no problem of reducing glare in incandescent lamps prior to Pipkin's invention, because "it was not until 1926, when gas filled lamps of low wattages were produced, that the 'glare' became noticeable."

It will be noted that Pipkin's application for the patent here involved was filed in 1925. Respondents' argument would endow Pipkin with great prescience indeed in foreseeing a problem which did not exist when he undertook to solve it.

The record naturally does not support any such argument. Plaintiff's Exhibit 12 (R. 147, 10-13) shows a whole series of lamps which represent early attempts to produce bulbs which would be free of glare. Some of these were externally frosted bulbs, some molded bulbs, and one a painted bulb,—but all of them had objectionable features and none of them was satisfactory (R. 10-13, 84).

The witness Spencer, a physicist in the employ of the petitioner, was set to work by the petitioner in May of 1919 to see what could be done about devising a satisfactory glare reducing bulb for electric lamps. He testified (R. 10):

> "practically all of the electric lamps that were then made were made with clear bulbs and *it was recognized that they did cause glare* and that it would be an advantage to diffuse the light of the filament, the very bright filament."

The desirability of an inside frosted lamp bulb, if a satisfactory one could be produced, had long been recognized (Kennedy Patent of 1903, R. 259), and among other

things, Spencer tried inside frosting by the use of the same procedure which had been used for outside frosting, but could produce only "a bulb that was excessively weak" (R. 17).

Indeed, respondents' counsel appears to us to have *conceded* at the trial that the glare problem antedated Pipkin. We quote (R. 16):

> "MR. NEAVE: Well, may it please the Court, I think here we are placing the background and the problem in the art; what took place prior to the Pipkin invention is of importance as showing what the problem was. In fact, Mr. Darby's statement in his opening shows that clearly.
>
> "THE COURT: Well, of course, the difficulty counselor, is, I suppose, Mr. Darby concedes that the ordinary bulb with the filament completely exposed, with the resultant glare was not satisfactory and that there was in the industry some effort to overcome this objectionable feature. *You concede that, I suppose.*
>
> "MR. DARBY: *If such a concession is necessary.*"

And when petitioner undertook to offer in evidence a Herrman patent of 1913 in order to show that the problem of glare was recognized at that date, the offer was withdrawn in view of the following statement made by the Court (R. 134):

> "THE COURT: Well, of course, I will tell you this about it, from my own personal observation: that *anyone who can say the exposed filament didn't present a problem of glare may have been slightly mistaken, because it seems to me to be obvious. It is like the open flame in front of your eyes. An open filament is equivalent to the same thing. If it wasn't a problem we wouldn't have all these fancy fixtures and different things, shades and the like.* Direct light has always been a problem, even when it came to the windows; it hit you right in the face."

The Invention Which Pipkin Patented Was a New Article —a Particular Kind of Inside Frosted Lamp Bulb

Respondents' brief persistently asserts that Pipkin's claims, properly construed, are for a process, to wit, a process involving a "two-step" or two-etch treatment.

As we have shown in our main brief, pp. 40-43, this assertion is without foundation. The Court of Appeals below agreed with the Courts in the Sixth and Second Circuits in holding "the claims are product claims and must be so construed" (R. 352).

There is in fact no reference to process whatsoever in the claims except as they specify a bulb having its interior surface "frosted by etching," which is merely another way of saying that the surface is an etched surface, which, as the patent explains, means one in which the irregularities are due to the removal of material "rather than by application of coatings" (Pipkin patent, p. 1, line 22; R. 141).

The patent is entitled "Electric Lamp Bulb," and the claims are expressly directed to an electric lamp bulb *as a product*, which product they define not by the process by which it is made, but by its characteristics as a product. We have discussed this point in our main brief at pp. 40-43 and have shown, we think conclusively, that there is no basis whatsoever for the assertion that the Pipkin claims import any "two-step" or other particular etching method.

Respondents assert at p. 5 of the brief:

> "Since the patentee acknowledged that inside frosted lamp bulbs were old, the only thing that could have been advanced by him as an invention was the allegedly new process—the two-step process."

It seems sufficient to state in answer to this *non-sequitur* that while inside frosted bulbs had been suggested since 1903, no one before had made or suggested the particular bulb which Pipkin invented and patented, an inside frosted bulb characterized by rounded as distinguished from sharp angular crevices.

Since the Pipkin claims are not limited to any particular etching method as a means of producing the interior bulb surface which they describe, it is, strictly speaking, immaterial whether respondents' method is a "one-step" method or a "two-step" method. However, as we have pointed out in our main brief (pp. 43-47), respondents' process, which they admit (R. 99) is disclosed in the Herzberg et al. patent (R. 311), is in all substance the same "two-step" process as that preferred by Pipkin to produce his patented bulb—a frost-etching step followed by a treatment with a weaker etching solution to round out the sharp crevices created by the first treatment.

As we have pointed out, the Herzberg patent quite correctly refers to its "second treatment" (R. 311, Col. 2, ll. 12, 47-48) and "second-step" (R. 312, Col. 1, l. 24), and the effect of respondents' second treatment or second step is exactly the same as Pipkin's second-step, as pointed out by respondents' own expert (R. 131-132) and by the District Court in its opinion (R. 332).

Respondents' repeated assertion that their method is a "one-step" or single etch method, which assertion is made at least eight times in respondents' brief and pervades their whole argument, is directly contrary to the facts, as we have pointed out in detail in our main brief (pp. 43-47).

Prior Litigations

Respondents' brief at pp. 7-8 quotes extracts from the decisions of the Courts of Appeals in the Sixth and Second Circuits which it says (p. 9) show that in the opinions of these courts, "the main and only novel feature of the Pipkin patent was the *two*-step process."

Examination of these decisions will show that this is not correct. Both courts recognized and expressly stated that Pipkin's claims are for a product, not a process (82 F. 2d 100, at pp. 102, 103; 93 F. 2d 671 at p. 672), and both assumed that two-step etching processes *per se*, were old in the art.

The Court in the Second Circuit expressly said (93 F. 2d 671, at p. 673):

> "It was shown as early as 1887 by a glass technologist that the sharp angular surfaces of the crevices of a frosted surface could be rounded out by the use of dilute hydrofluoric acid * * *."

The Court in the Sixth Circuit said (82 F. 2d 100 at p. 103):

> "Just as an old process may be practiced by a new machine, or a new process by machinery which may be either old or new, just so a new article of commerce may involve the exercise of the inventive faculty even though in producing it a known method is resorted to."

Equally without basis is respondents' assertion (Brief, p. 7) that "Petitioner is here forced to admit (brief, p. 21) what is vigorously and successfully denied in the prior litigations in the Sixth and Second Circuits, namely, that Pipkin's two-step process had been published in the literature of the art at least as early as 1887."

The prior literature which shows the antiquity *per se* of a "two-step process" of etching (Die Glashutte, Sprechsaal, Tillotson) was cited in the *Wabash* case and fully discussed in the briefs in that case in much the same language as used in the briefs here. We stated there (appellant's brief, p. 12), as we have stated here (petitioner's brief, p. 22):

> "But the significant thing about these disclosures is that *none of them even intimates that this rounding of the crevices is capable of having a strengthening effect on frosted glass of any kind, or that it can have any utility in connection with inside frosted electric lamp bulbs.*"

In a footnote at p. 8 respondents' brief asserts that Judge Galston at 29 F. Supp. 1003 denied a motion to punish for contempt in the *Wabash* case "because the defendant

had abandoned the use of lamps made by the two-step and adopted a one-step process." This, again, is not correct. The motion was denied because the Court held that the plaintiff had not sustained the burden of proof necessary on a contempt motion, to prove that the Wabash bulbs, as then made, were characterized by the rounded crevices of the patent; and, regarding the Wabash process, which was asserted to be a one-step process, the Court specifically said (p. 1004):

> *"It is not intended by this observation to indicate that a difference in process could avoid infringement of the patent in suit, for the two claims of the patent are for a product."*

The Pipkin Claims Are Sufficiently Definite

Respondents' brief argues (pp. 14-18) that the Pipkin claims "are fatally indefinite and vague," a point discussed in our main brief at pp. 32-37.

Respondents' entire position on this point seems based upon their interpretation of a single answer, made by petitioner's expert, Spencer, upon cross-examination. Spencer, being a man of science, stated that he didn't believe "that any two real planes would intersect in a mathematical line. So there is some radius of curvature, where two real planes would intersect" (R. 52).

Based upon this, respondents say (Brief, pp. 15-16), that in *every* frosted surface, even though frosted by an ordinary "one-step" etching process, such as disclosed in the Kennedy patent of 1903, the crevices are "rounded to some extent." The brief asserts (p. 16):

> "Therefore, even the 'sharp angular crevices' that the patent claims refer to as resulting from the old one-step etching are in fact 'rounded' to *some* extent, and all that Pipkin's strengthening treatment does is to round them more—a mere matter of degree or radius of curvature."

The argument is the purest sophistry. It is based upon mere mathematical abstractions, not upon reality.

What Spencer said in the passage cited in respondents' brief was merely that in practice there is no such thing as two real planes intersecting in a mathematical straight line; that there is always in practice some departure from a mathematically straight line intersection, i. e., "*some* radius of curvature."

This is for the reason that mathematically straight lines and mathematically true planes are not found in nature or in products made by human hands or by man-made implements, but only in the abstractions of a geometrician.

Pipkin was not talking pure mathematics nor are his claims to be construed from the point of view of pure mathematics.

What the claims say is that the crevices are "rounded as distinguished from sharp angular crevices."

From the practical point of view there is no question whatever about the reality of the distinction; and no one throughout the case has shown the least inability to understand that distinction.

The matter presented no problem to the District Court as will be seen by its comments during the trial (R. 53, 128) and by the fact that it found that respondents' bulb surface was "characterized by the presence of rounded as distinguished from sharp angular crevices" (R. 343).

Spencer took photomicrographs of the surface of both petitioner's and respondents' bulbs and testified as to the rounded nature of the crevices (R. 37, 39).

Kurtz, chief designer of optical instruments at Bausch & Lomb Optical Company, examined the surfaces and made orthostereoscopic photomicrographs, and testified that "the depressions were invariably rounded" (R. 68).

Respondent Herzberg, in his patent No. 2,025,588 (R. 311), expressly uses the term "sharp angular crevices" as descriptive of certain prior art surfaces (R. 311, lines

30-45) and also states that a fortifying treatment is supposed "to round out the angular crevices in the glass" in those surfaces.

Again, respondents' expert, Allen, compared photomicrographs of two bulb surfaces one bulb rinsed in *cold* water after frosting while the other was subjected to respondents' second treatment with *hot* water. Allen said with reference to the first specimen:

> "we see that the *sharp angular crevices* at the bottom do persist" (R. 131),

whereas in the other specimen

> "I see at the bottom of these crevices evidence of *the removal of the sharp angle between them*" (R. 131).

Respondents' brief itself treats the term "rounded" as adequately distinguishing from "sharp angular" crevices. Thus it says (p. 30) that the Die Glashutte article is a disclosure of a two-step etching treatment

> "with a clear exposition of the realization that the successive treatments *round out* the *sharp angular crevices* produced by the first etching."

And it has no hesitation in asserting (p. 30) that a photograph in the Die Glashutte article appearing at R. 304 "illustrates the same kind of rounded pits as Pipkin now claims."

Again at p. 31, the brief, speaking of the Sprechsaal publication, says:

> "The satin or silk-like finish is produced by the *rounding out* of the *sharp edged* plts in the frosted surface."

And at p. 32 respondents' brief admits that

> "Tillotson not only described in detail the rounding out of the crevices but illustrated it by microphotographs."

Respondents' argument subordinates substance to form.

On p. 18 respondents' brief asserts:

> "petitioner is forced to assert novelty in Pipkin for the rounded crevices, closing its (and, it hopes, this Court's) eyes to its earlier admission that such rounded crevices were in the prior art at least as early as 1887."

This, of course, completely misrepresents petitioner's position. We do not assert novelty in Pipkin for rounded crevices *per se*. We do assert novelty in Pipkin for an inside frosted bulb characterized by the presence of such crevices, and we challenge respondents to point to *any* evidence of the existence of such a bulb prior to Pipkin. The vital point lies in the difference between rounded crevices *per se* and a new bulb which makes use of such crevices to solve an old problem.

The Defense of Alleged "New Matter" and Lack of Supplemental Oath is Without Merit

Points II and III of respondents' brief (pp. 19-28) assert that the Pipkin claims are invalid "because they are directed to new, different and inconsistent subject matter belatedly inserted into the patent by amendment" and because they were not supported by supplemental oath. This same contention was urged upon both courts below but was not even mentioned by the District Court in its opinion, there was no Finding of Fact or Law concerning it and it was not passed upon by the Court of Appeals. The same contention was made in the *Wabash* case and was there rejected by the Second Circuit Court of Appeals.

Despite the fact that this contention has not been sustained by any of the courts which have considered it, respondents now apparently give it precedence over the defense of lack of invention which was sustained, erroneously, we believe, by the Court below.

This technical defense is wholly without merit, as the Circuit Court of Appeals for the Second Circuit held. Be-

cause the decision in that case is a complete answer to the respondents' contentions here, we quote at some length from that decision (93 F. (2d) 671, 673-4):

> "But it is argued that the patent is invalid because the statements appearing in the last paragraph of its specifications and in its claims that the frosted inside surface of the bulb is characterized by rounded, as distinguished from sharply angular, pits or depressions, was inserted by an amendment to the application for the patent after it had been filed, and without a supplemental oath. The application into which these statements were inserted by amendment, without supplemental oath, was a continuation of the original application of February 4, 1924, and was so stated on its face when it was filed June 29, 1925. The original application was first made part of the continuation application and described the same strong inside frosted bulb and the same two-step method of producing it. In the original application which was accompanied by the inventor's oath, he pointed out clearly that the first etching produced pits in the glass having comparatively sharp angular shapes and that these were rounded out by the treatment suggested by his invention which he called a strengthening treatment. His original Claim 8 was for a 'bulb for electric lamps and similar articles having its inner surface covered with rounded etching pits or depressions.' It was while his original application was still pending that the statements of which defendants complain were introduced by amendment into the specifications and claims of the continuation application which ultimately resulted in the patent being granted. The oath of the original application was all that was needed to support these statements. See: *Westinghouse Elec. Co.* v. *Metropolitan Elec. Co.*, 290 Fed. 661."

It will be noted that the Court in the Second Circuit, in overruling defendants' argument, cited one of the two cases which respondents *still continue to cite* as *supporting* their argument, *Westinghouse Elec. Co.* v. *Metropolitan Elec. Co.*, 290 Fed. 661.

The explanation is that respondents fail to include in their quotation from the opinion in that case *the significant part*, which is stated in the last paragraph thereof (p. 665) as follows:

> "Result is that a claim fairly derivable from a sworn disclosure is good, whether originally presented or introduced by amendment; and such claim needs no supplemental oath." *

The case of *George Cutter Co.* v. *Metropolitan Electric Mfg. Co.*, 275 Fed. 158 (C. C. A. 2), which respondents cite in this connection, was an earlier opinion in the same litigation, and the second of these cases (the *Westinghouse* case) explains the language used in the first.

In view of this decision by the Second Circuit Court of Appeals and the facts that none of the courts which have considered this defense has sustained it and that there was no finding in this case concerning it, we believe it is unnecessary to discuss it further here. However, we have included, in an appendix to this brief, an analysis of the file wrappers of the two Pipkin applications, so that it will be available if the Court wishes to consider it.

Pipkin's Contribution Amounted to Invention

We have discussed the prior patents and publications in our main brief and have shown why we believe they emphasize the merits of Pipkin's invention, and the validity of his patent. The treatment of the prior art in respondents' brief seems to call for but little additional comment.

The Kennedy patent.

As we have shown in our main brief (pp. 17-21) the only thing about the Kennedy patent which is pertinent in this

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* To same effect see *Heller* v. *Crucible*, 297 Fed. 39, 43 (C. C. A. 3) and *Proudfit* v. *Kalamazoo*, 230 Fed. 120, 141 (C. C. A. 6).

suit is that it shows a recognition of the desirability of an inside frosted light bulb as early as 1903. And yet the undisputed fact is that no one was able to produce an inside frosted bulb strong enough for practical use until Pipkin's invention. Respondents have not even attempted to prove the contrary.

Respondents' brief complains (pp. 34-35) that petitioner has not overcome "the presumption of validity and utility which attached to the grant of the Kennedy patent." This is entirely beside the point. We are not concerned here with the validity of the Kennedy patent or the utility of the particular method and apparatus which Kennedy discloses for introducing a frosting solution into the interior of a lamp bulb. The only question here is whether or not the Kennedy patent anticipates the Pipkin patent for an inside frosted bulb characterized by rounded crevices. As we have shown on pages 17-21 of our main brief, Kennedy does not even touch upon Pipkin's invention.

On p. 34, respondents' brief seeks to profit by quoting the erroneous statement of the trial court that the Kennedy method was demonstrated at the trial. As we have stated in our main brief in the footnote on p. 20, and as respondents do not specifically deny, the court room demonstration referred to *was not a demonstration of the Kennedy patent* and did not even purport to be so. The only process which was demonstrated at the trial was a simulation of *respondents' process;* that is to say, not any process which was disclosed in the Kennedy patent of 1903, but on the contrary, *a process which is the subject matter of respondents' Herzberg et al. patent No. 2,025,588* (R. 311), *which was taken out in 1935, over thirty years after Kennedy.*

This Herzberg et al. patent particularly says of early proposals regarding inside frosting that although by them a frosting-etch is produced,

> "the inside surface of the bulb is etched in such a manner that it is full of sharp angular crevices which

> weaken the glass to such an extent that breakage occurs on very slight shocks" (R. 311, Col. 1, ll. 35-39).

Although Kennedy is not particularly mentioned in this connection, the remark obviously applies to Kennedy.

The demonstration in question was conducted by respondents' manager Herzberg and is reported in the record at pp. 100-105. It was preceded by a statement by respondents' counsel as follows (R. 100):

> "Mr. Darby: Your Honor, I want to demonstrate two things in open court room. I want to demonstrate a virtual reproduction of defendants' commercial process of producing a strong frosted lamp, inside frosted lamp, using its own etching solution, and then by doing exactly the same thing, make the lamp crack, subject it to the bumping test to show your Honor that whether the lamp is strong or weak has nothing whatever to do with Pipkin's invention."

Then followed a demonstration in which Mr. Herzberg used *respondents' own etching solution and a simulation of respondents' regular procedure,* with the hot water treatment succeeding the first etching treatment, resulting in a strong bulb. This was followed by a demonstration involving the *substitution of a cold water wash for the hot water treatment of the first demonstration, which produced a fatally fragile bulb.*

There was no attempt to follow the teaching of the Kennedy patent either as to procedure or as to etching solution.

The demonstration did not use the suction apparatus or method shown in the Kennedy patent, but instead the solution was poured in and out of the bulbs three times for each treatment (R. 103, 104).

The procedure which produced the strong bulb was not Kennedy's procedure of an etching treatment followed by a mere washing or rinsing operation, but respondents' *patented* two-etch treatment consisting of first an etching

treatment followed by, second, a strengthening treatment, with hot water acting in conjunction with the residue of the etching solution which remained in the bulb after the first treatment, to round the crevices.

Nor was the solution used in the demonstration anything taught by Kennedy (for indeed Kennedy gives no formula for an etching solution), but the particular and special etching solution which is described in respondents' Herzberg et al. patent of 1935 (R. 311; see Herzberg R. 115).

Respondents' brief, at pp. 41-43, says, "washing with hot water was a well known expedient in the etching of glass." But whether hot water, used as respondents use it in their second treatment, will have any material effect on the glass, *depends upon the character of the etching solution which is applied to the glass in the first treatment;* on its viscosity depends the amount of the material which will adhere to the walls of the bulb and become available for the second treatment, and upon its strength depends the chemical activitiy of the dilute solution which is formed when hot water is added.

The action also depends upon how long the resulting dilute hot acid solution remains in contact with the frosted surface.

And, finally, the temperature of the water is critical. It must not, according to respondents' patent (R. 311) be below about 150° F., or the desired action will not take place, and in respondents' practice care is taken to maintain it at 180° F. (R. 93). Although some of the prior publications refer to washing with hot water, no temperature is specified.

Respondents' solution is especially prepared with a view to this action. It is made strong enough, and viscous enough, so that when mixed with hot water at 180° F., it will act upon the glass and thus produce the rounding of the theretofore sharply angular crevices, with its resultant effect upon the strength of the bulb.

With solutions not especially prepared for this purpose, the use of hot wash water would not have the desired effect on the glass, as the record shows (R. 29-30).

The language in *Skelly* v. *Universal*, 31 F. (2d) 427, 431 (C. C. A. 3) is particularly apt to the attempt here made to transform the Kennedy patent by "*ex post facto* wisdom" into an anticipation of Pipkin. The Court there said:

> "A patent relied upon as an anticipation must itself speak. Its specification must give in substance the same knowledge and the same directions as the specification of the patent in suit. * * * It is not enough to prove that a method or apparatus described in an earlier specification can be made to produce this or that result."

The Harrison Patent No. 1,299,936.

In our main brief, we did not discuss the Harrison patent No. 1,299,936 (R. 265) because it is so clearly irrevelant, the District Court having stated in its opinion (R. 331) that it was "irrelevant because its disclosures are too remote." It was evidently so considered by the Circuit Court of Appeals below and by the Circuit Court of Appeals in the Second Circuit case, since neither court found it worthy of mention.

However, respondents' brief discusses this patent at some length (pp. 36-37) and we will therefore comment on it here.

The Harrison patent deals, not with an electric light bulb, but with a very different type of article, a protective globe to be used as a fixture for housing an incandescent electric light bulb.

With such a housing globe there is no problem of fragility, such as there is in the thin and delicate wall of an incandescent lamp bulb. No etching treatment applied to a heavy glass structure such as that with which Harrison is concerned would weaken it to any perceptible extent.

One of the reasons, then, why the disclosures of Harrison are "too remote" to be relevant is the fact that Harrison was dealing with something very different from an electric lamp bulb (with which alone the Pipkin claims are concerned), and an article as to which there was no problem of fragility.

Another reason for the irrelevancy of the Harrison patent is that whereas the Pipkin claims require an electric lamp bulb with a frosted interior surface, there is no frosted surface whatever in Harrison's device, which is given its configuration by molded protuberances and depressions. They are an utterly different thing from the extremely minute crevices of a frosted surface, which has millions of such crevices per square inch (R. 61). Attempts to remedy the problem of glare in electric lamp bulbs by molding the surface had been made long before Pipkin, but with no success (R. 12, 84).

It is, then, not surprising that none of the courts below has thought Harrison close enough to be relevant.

Respondents' Bulbs Infringe the Pipkin Patent

Points V and VI of respondents' brief argue that respondents do not infringe the Pipkin patent. As we have shown in our main brief (pp. 37-39) respondents' bulbs correspond completely to all of the requirements of the claims of the Pipkin patent and are in effect a Chinese copy of the patented bulb.

The first contention, found in point V, is that respondents avoid infringement because they use a process which they claim to be a "one-step" process. This contention we have discussed fully in our main brief (pp. 43-47) and have again referred to at pp. 4-6 of this brief.

Point VI of respondents' brief (pp. 43, 44) argues that the inside frosted surface of its bulb is not characterized by

the same kind of crevices as are produced by the Pipkin process.*

The brief says:

> "If the critical limitations in the claims mean anything, then they must mean that there are *no* sharp angular crevices left in the bulb. Concededly, in bulbs produced by the respondents' process, there are some *angular* crevices; and the *rounded* crevices differ from petitioner's commercial structure (XQs. 220-225, R. 49; XQs. 32-38, R. 71; R. 128; R. 132-133)." (Emphasis in original.)

It is *not* conceded and it is *not* a fact that there are "some angular crevices" in respondents' surface. There is no testimony to that effect in any of the passages of the record cited in connection with this statement; and, to the contrary, the testimony of Kurtz, the expert in orthostereoscopy of Bausch & Lomb Optical Company, who examined the respondents' bulbs and made orthostereoscopic microphotographs of them, is that *the depressions were "invariably rounded"* (R. 68).

The only differentiation between the crevices in petitioner's surfaces and those in the respondents' surfaces which respondents' expert witness Allen advanced was that, the depressions in the respondents' surfaces were *broader* than those in the petitioner's surfaces (R. 126); and the District Court expressly found in its opinion that the in-

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* Respondents' brief at p. 43 says:

> "It would be interesting to see what a bulb looks like that *was* frosted in accordance with the Pipkin process. *No one has ever seen one.*" (Emphasis in original.)

The etching solution now used by petitioner in manufacturing its commercial bulbs is not, to be sure, precisely that of the formulae stated in the Pipkin patent, but Spencer testified that he had himself treated bulbs with the exact formulae and procedures set forth in the Pipkin patent and that the surfaces so produced were identical with the surfaces of petitioner's and respondents' commercial bulb (R. 55, 56, 84, 85).

terior surfaces of respondents' bulbs are in fact "characterized by the presence of rounded as distinguished from sharp angular crevices," as required by the claims (Opinion, R. 343).

Conclusion

As respondents' brief admits (p. 36):

> "At least since the date of the Kennedy patent [1903] we knew that an inside frosted electric lamp bulb was preferable to outside frosted bulbs."

We also know that in spite of all Kennedy had to teach, no one succeeded in producing a useful inside-frosted bulb until Pipkin did his work, 20 years or more after Kennedy.

Although it had been known since 1887 that two-etch methods would produce a surface with rounded as distinguished from sharply angular crevices, no one prior to Pipkin had suspected that a surface characterized by the presence of rounded crevices differed as regards resistance to breakage from the ordinary form of frosted surface in which the crevices were sharply angular, and no one had ever suggested the use of such a surface on the interior of a lamp bulb.

As the Court of Appeals for the Sixth Circuit said in sustaining the Pipkin patent in the *Save* case (82 Fed. 2d 100, 103):

> "it was clearly not obvious that the removal of additional material from an already weakened lamp bulb would strengthen it."

And, as the Court of Appeals for the Second Circuit said in the *Wabash* case (93 Fed. 2d 671, 673), likewise holding the Pipkin patent valid:

> "Like all problems when solved, it may be argued to be simple, but where, as here, it appears that the

accomplishment had eluded the search of those interested in finding its solution until this inventor's contribution, he should be accorded the fruits of a patent for his accomplishment."

Respectfully submitted,

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APPENDIX

The Patent Office Histories of Pipkin's Original and Continuation Applications

In his original application (R. 159) Pipkin described his new lamp bulb, and the two-step process by which he produced it, giving appropriate formulae for the solutions to be used in those steps. He stated that the inside frosted bulb of his invention was found to have "much higher resistance to shock, as shown by the 'bump' test" than inside frosted bulbs not involving his invention (R. 164), and he put forward as the probable explanation of this increase in strength, the fact that "*the sharp angled pits or depressions caused by the first etching*" *had been rounded out* (id.). He included in the application, claims to the process; and also claims to the article specifying that "its inner surface [was] covered with rounded etching pits or depressions" (R. 168).

This application, as filed, was supported by the usual inventor's oath (R. 169).

While this original application disclosed Pipkin's strong inside frosted bulb with rounded crevices and how to make it, it did not set forth in *figures*, its degree of strength or its degree of frosting. In addition to the claims which he was seeking in this first application, Pipkin conceived that he was entitled to claims defining his new bulb solely by these properties (strength and frosting), regardless of its structure. With that in view, Pipkin filed the continuation application which eventuated into the patent in suit.

This continuation application, as filed, stated on its face that it was a continuation in part of the original application, which it incorporated by reference, giving serial number and filing date (R. 201). Like the original application, it was supported by the usual inventor's oath, and this oath in addition *specifically reaffirmed Pipkin's inventorship of all features disclosed in the original application*

(R. 218, 219). It included appropriate formulae, etc., for producing Pipkin's new bulb by the two-step process; and in addition, the continuation gave figures for the actual strength of the bulb on the bump tester, and figures for its degree of frosting (measured in terms of maximum brightness per square centimeter).

When Pipkin filed his continuation application seeking broad claims defining the bulb by its properties of strength and degree of frosting alone, he did not include in it, in so many words, any statement about the bulb's rounded crevice structure. The process described produced a frosting characterized by rounded crevices and Pipkin's original application, to which this continuation application specifically referred, set forth the facts in this regard. At the moment, however, his primary interest was in the *properties* of the bulb. Nevertheless, in his initial amendment to the continuation application he incorporated in its specification a statement about the rounded crevices similar to the one in the original application.* (R. 224)

Later Pipkin found that the Patent Office would not allow him claims defining his novel bulb only by its properties, that is, its strength and its diffusing power (measured in brightness), so he then presented the claims here in suit, which define his bulb both by *its properties* and its rounded crevice *structure* which is responsible for its strength (R. 232). The Patent Office promptly allowed those claims and granted the patent (R. 236).

Up to the time of the allowance of the continuation application, Pipkin had continued his prosecution of the original application. Upon the allowance of the continuation application, prosecution of the original application was discontinued. Only one invention was involved and two patents could not be granted for it. Accordingly, the Patent Office was notified that there would be no further prosecu-

* This statement was changed slightly by a subsequent amendment (R. 237) to the form in which it appears as the last paragraph of the specification of the patent (R. 144).

tion of the original application, since the allowed claims of the continuation application were "deemed to be sufficient for the protection of the applicant's invention" (R. 186).

Clearly, the Patent Office histories of the Pipkin applications do not support the defense urged by the respondents.

The history of Pipkin's efforts to get his patent is the common history of an inventor who does not know at the time his application is filed, just what the limits of his true invention are, and who therefore changes the claims of his application by various amendments until the Patent Office agrees that they properly define his true invention.

The amendment to the continuation application, of which respondents complain, merely repeated a fact concerning Pipkin's bulb which he had already disclosed and sworn to in his original application, and which was also inherent in the continuation application as filed. This amendment was entirely proper, as the Patent Office and the Circuit Court of Appeals for the Second Circuit have held.